

ORIGINAL ARTICLE

Consumption of sugar-sweetened beverages: A cross-sectional study among university students in Sarawak

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Abstract

Objective: This study aimed to examine the prevalence and type of Sugar-sweetened Beverages (SSB) consumption among students at a public university in Sarawak.

Methods: This was a cross-sectional study conducted among undergraduate students in a public university in Malaysia. Using questionnaires, data on socio-demographics, SSB consumption, family and personal history of diabetes, as well as knowledge of SSB intake was collected. Anthropometry measurement was also taken in the survey. Data were analyzed using IBM SPSS version 22.0.

Results: A total of 208 respondents participated in the study. About one-fourth of the respondents consumed SSB at least once daily (83.6%) and as high as 72.1% consumed SSB more than three times a week. The top three most consumed types of SSBs were coffee, flavored milk, and 3-in-1 sachet drink (53.4 to 76.0%). Malay and other ethnic groups (Bumiputra Sarawak, Bumiputra Sabah, Indian, and other ethnic groups) recorded a significantly higher daily consumption of SSB (≥ 1 time) compared to Chinese respondents.

Conclusions: Understanding the pattern of SSB consumption among young adults is important to establish an effective intervention strategy. The findings highlighted the need for targeted interventions aimed at different ethnicities in view of their dietary consumption patterns in a multicultural society like Malaysia.

Keywords: Sugar-Sweetened Beverages, Young Adults

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INTRODUCTION

Sugar-sweetened beverages (SSB) are defined as all types of beverages containing free sugars such as monosaccharides and disaccharides¹ These include cordials, carbonated soft drinks, flavored mineral water, energy drink, sports drinks, electrolyte drinks, vitamin-fortified juice drinks, fruit and vegetables-based drinks with added sugar, as well as sweetened tea and coffee.² Even though many sweeteners in the market are marketed as healthier and prepared from natural and organic ingredients, these claims may be misleading as these sweeteners remain sugar-based compounds that produce excessive calories and virtually no other beneficial nutrients for body metabolism.³

The worsening obesity epidemic has gained the attention of public health and clinical practitioners worldwide. Recently, local studies reported a high prevalence of obesity ranging from 20 to 30% among Malaysian university students.^{15,16} The high prevalence of overweight and obesity among university students is a public health concern as excessive weight gain leads to various comorbidities such as diabetes, hypertension, and cardiovascular diseases.¹⁷ Consumption of SSB can be one of the contributing factors to such health concerns. Increased consumption of SSB has been linked with obesity, high blood pressure, dental caries, type 2 diabetes, cardiovascular disorders (CVD), inflammation, insulin resistance, metabolic syndrome with impaired glucose tolerance, and impaired β -cell function among both pediatric and adult age groups.^{8,9,10,11} Besides that, SSB consumption was also reported to predispose to a higher risk of psychological health problems such as depression.^{12,13,14}

Due to the adverse implications, SSB consumption behaviors among the younger generation have always been monitored by health practitioners.^{4,18,19,20} Globally, the type of SSB consumed by adolescents and young adults varied in different countries. In Australia and New Zealand, the most popular SSB include soda, energy drinks, sports drink, fruit juice, and artificially-sweetened soda.⁴ In Brazil, apart from the above-mentioned SSB, the local population also favors the intake of sweetened coffee and tea, as well as milk and milk products.⁵ In certain countries like Korea, the type of SSB changes according to season whereby the consumption of fruit juice and carbonated beverages tend to be during summer. SSB consumption was also higher in girls than in boys.⁶ In Malaysia, based on a local study in one of the public universities, sweetened coffee and tea, as well as 3-in-1 sachet drinks are the most popular type of SSB.⁷ Furthermore, the prevalence of SSB consumption also varies worldwide. In the United States (US), the National Longitudinal Study of Adolescents and Adults Health revealed a high consumption of SSB, in which 87.3% of the respondents consumed SSB in the previous week and 47.8% of them consumed eight or more such beverages.¹⁹ In addition, the findings from the National Health and Nutrition Examination Survey 2007-2008 also reported a high consumption of SSBs (≥ 500 kcal/day) among adolescents and young adults (36%). In Malaysia, the National Health and Morbidity Survey (NHMS) 2017 showed that 36% of Malaysian adolescents consumed at least a can of carbonated drinks every day.²¹ The findings were consistent with other local studies. A study among 401 undergraduate students reported that 89.3% of them consumed SSB at least once